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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/627,571	07/28/2000	Haixiang Liang	30.7*6/DBP/B600	2336

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EXAMINER

CHANG, EDITH M

ART UNIT PAPER NUMBER

2637

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/627,571	LIANG, HAIXIANG	
	Examiner	Art Unit	
	Edith M. Chang	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8, 13-29 and 31-36 is/are rejected.
- 7) ☒ Claim(s) 1, 9-12 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments/Remarks

1. Applicant's arguments, see pages 13-15, filed on July 5, 2205, with respect to claims 1-28 have been fully considered and are persuasive. The 35 U.S.C. 103(a) rejection of claims 1-28 has been withdrawn.

Claim Objections

2. Claims 1-24 and 26-36 are objected to because of the following informalities:

Claim 1, line 6: "symbol estimates" is suggested changing to "symbol estimates for each of the phase intervals and". Since there is no corporation of the "symbol estimates" in the step/action of grouping phase intervals.

Claim 3, line 2: "each phase interval" should be "each of the phase intervals"; line 4: "includes" should be "further includes".

Claim 4, line 4: "includes" should be "further includes".

Clam 11, line 3: "Ucodes" should to spell out the meaning/abbreviation of "Ucodes".

Clam 11, line 3: "Uchords" should to spell out the meaning/abbreviation of "Uchords".

Claim 13, line 16: "constellation points" should be "the constellation points".

Claim 17, line 2: "each phase" should be "each of the N phases".

Claim 20, line 11: "the sequence" should be "the sequence of symbols".

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Claim 21, lines 7-8: "of constellation points for the particular constellation index" is suggested changing to "for the particular one of the J constellation indices".

Claim 27, lines 112-13: "symbol estimates characteristic" is suggested changing to "a symbol estimates characteristic".

Claims 31 & 34, lines 1-2: "each characteristic group" should be "each of the characteristic groups".

Claims 33 & 36, line 2: "each timing phase" should be "each of the timing phases".

Claim 35, line 5: "the phases" should be "the N phases".

Claims 2, 5-10, 12, 15-16, 18-19, 22-24, 28-30 and 32 are directly or indirectly dependent on the objected claims 1, 13, 20 and 27.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-8, 13-17, 20-29, 34 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2, 13, 20 & 26, add a legend such as the type, value and the range of the "J", when the J first recited in the independent claim to clearly point out the subject matter.

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Claim 2, lines 8-9 & line 10: "the constellation index" does not clearly indicate that it is "the current constellation index" recited in claim 1 or an "other constellation index"; line 13: "constellation indices" does not clearly indicate that it is the "constellation indices" recited in claim 1, line 8; or the "J distinct constellation indices" recited in claim 2, lines 5-6.

Claims 3 & 4, lines 2-3 & 7: "the constellation index" lacks antecedent basis.

Claim 5, line 2 & lines 6-7: "the constellation index" lacks antecedent basis; line 2: add a legend of the "k" of k^{th} , such as the type, value and the range of the "k".

Claims 6 & 7, lines 2-3: "each constellation index" lacks antecedent basis. Since there is no "constellation indices" recited in the claim 1, what does the "each constellation index" refer to?

Claim 8, line 3: "the constellation index" lacks antecedent basis.

Claims 13, 25 & 27, add a legend such as the type, value and the range of the "N", N should be an larger than one integer to clearly point out the subject matter, when the N first recited in the independent claim.

Claim 14, line 5: "respective phases" does not clearly indicate that it is "the respective plurality of the phases" recited in the claim 13 or other "respective phases"; lines 6-7: "the respective constellation index" lacks antecedent basis.

Claim 15, lines 2-3: "the selecting of the constellation points for a particular constellation index" does not clearly indicate that it is the selecting the constellation points for the particular one of J constellation indices recited in claim 13 lines 15-16 or it is a different selecting; lines 5-6: "the particular constellation" lacks antecedent basis.

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Claim 16, lines 2-3: "the selecting of the constellation points for a particular constellation index" does not clearly indicate that it is the selecting the constellation points for the particular one of J constellation indices recited in claim 13 lines 15-16 or it is a different selecting; lines 7-8: "the particular constellation" lacks antecedent basis.

Claim 17, line 2: add a legend of the "k" of k^{th} , such as the type, value and the range of the "k"; lines 4-5: "the constellation point selecting for a particular constellation" lacks antecedent basis;

Claim 20, lines 15-16: "constellation points" in "for the particular one of the J constellation indices, constellation points based on" does not clearly indicate that what the "constellation points" relation in the impairment compensator selecting.

Claim 21, lines 5-6: "symbol receptions" does not clearly indicate that the "symbol receptions" is the receiving the sequence" recited in claim 20, line 11; or other receptions.

Claim 22, lines 4-5: "the selected constellation points" lacks antecedent basis.

Claim 23, lines 3-4 & 5: "the constellation indices" lacks antecedent basis.

Claim 25, line 10 & Claim 26, lines 2-3: the "symbol estimates characteristic" of "symbol estimates characteristic of the one or more characteristic groups" does not clearly indicate that what is the "symbol estimates characteristic" related/corperated to "the symbol estimates" of the received sequence recited in lines 2-3 of claim 15, and the "aggregate effects of periodic impairments" of the set of characteristic groups recited in lines 5-6 of claim 15.

Claims 24, 28-29 and 34-35 are dependent on the rejected claims 20 and 25.

Allowable Subject Matter

5. Claims 1, 9-12 and 30 would be allowable if overcomes the objections set forth in this Office action.

6. Claims 2-8, 13-29 and 31-36 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and overcomes the objections set forth in this Office action.

7. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a communication device or apparatus and its method as a whole, the combination of elements and features, which includes during a training mode an impairment compensator receiving a sequence of symbols organized into N phases intervals, wherein N is a larger than one integer; grouping the N phases intervals into a set of characteristic groups according to aggregate effects of a periodic impairment in the N phases intervals; selecting a particular one of J distinct constellation indices corresponded to a respective plurality of the phase intervals as recited in the claims.

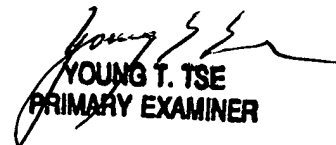
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
September 15, 2005


YOUNG T. TSE
PRIMARY EXAMINER